Eur J Vasc Endovasc Surg 9, 479–480 (1995)

ENDOVASCULAR AND SURGICAL TECHNIQUES

Percutaneous Stenting of Proximal Subclavian Artery Occlusion

N. J. Harris, I. Cameron, J. D. Beard and P. Gaines

Departments of Vascular Surgery and Radiology, Royal Hallamshire Hospital, Sheffield, U.K.

Introduction

Percutaneous transluminal angioplasty of symptomatic proximal subclavian artery occlusion is well documented.[1,2] Stenting has been reported only in patients with a residual stenosis or thrombotic material on the arterial wall.[1] We report a case in which a proximal subclavian artery occlusion was stented primarily with the intention of improving the long term patency rate.

Case Report

A 49-year-old man presented with a 1-year history of left arm claudication. A Duplex scan suggested a proximal subclavian artery occlusion with a vertebral artery steal. This was confirmed by arteriography (Fig. 1). The patient proceeded to stenting of the first part of the subclavian artery with a Palmaz prosthesis via a brachial approach (Fig. 2). Following the procedure there was no residual gradient. The patient received acetylsalicylic acid 300 mg daily and heparin 5000 U intravenously peroperatively. He was fully warfarinised for 3 months postoperatively. He is asymptomatic at 6 months.

Discussion

Stenting of proximal subclavian artery occlusions has previously only been performed following angioplasty if there was a residual stenosis, or thrombotic material was identified on the arterial wall. We stented a proximal subclavian artery occlusion with the

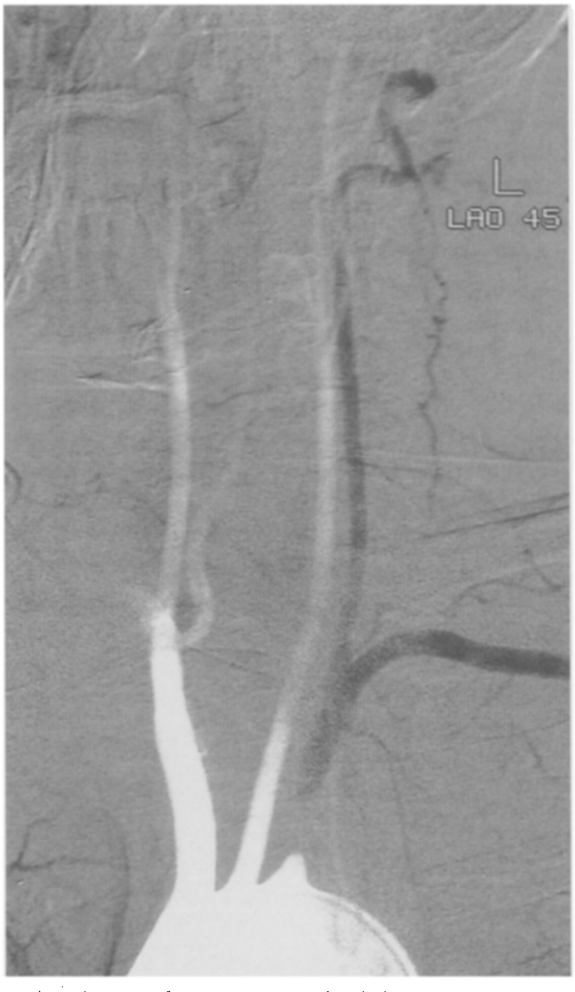

Fig. 1. Arteriogram showing proximal subclavian artery occlusion with a vertebral steal.

Please address all correspondence to: Dr N.J. Harris, Flat 4, 906 Ecclesall Road, Sheffield S11 8TR.

1078–5884/95/040479 + 02 $08·00/0

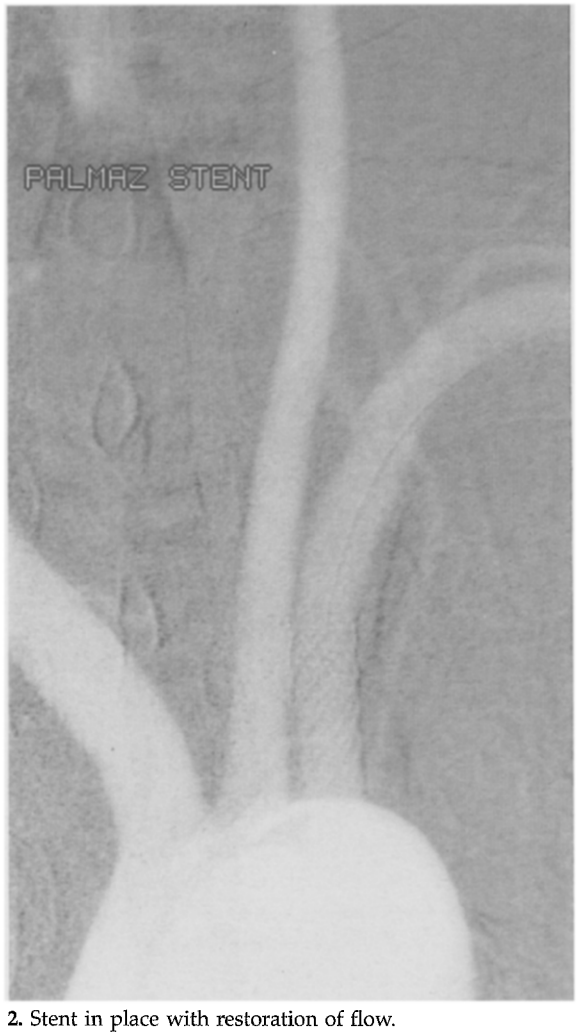

Fig. 2. Stent in place with restoration of flow.

intention of improving long-term patency as compared with angioplasty. The subclavian artery is of comparable size to the iliac artery and should therefore behave in a similar fashion. Recent results by Blum[3] and Vorwerk[4] indicated that iliac stenting achieves significantly better results than conventional angioplasty, and in larger vessels recurrence is due to progression of disease at a distal site rather than atherosclerosis or myointimal hyperplasia of the stented lesion.[5] Intimal hyperplasia affects smaller vessels and we feel this is unlikely to play a clinically significant role in the subclavian artery.[6,7] The risk of peripheral embolisation associated with primary stenting is in the order of 5%.[4] Embolisation of the vertebral artery is less because flow reversal does not occur immediately following recanalisation of the subclavian artery but after several minutes.

References

1 Mathias KD, Luth I, Haarmmann P. Percutaneous transluminal angioplasty of proximal subclavian artery occlusions. *Cardiovasc Intervent Radiol* 1993; **16**: 214–218.
2 Romanowski CAJ, Fairlie NC, Procter AE, Cumberland DE. Percutaneous transluminal angioplasty of the subclavian and axillary arteries: Initial results and long term follow-up. *Clin Radiol* 1992; **46**: 104–107.
3 Blum U, Gabelmann A, Matthias R, Noldge G, Dornberg W, Grosser G, Heiss W, Mathias L. Percutaneous recanalisation of iliac artery occlusions: Results of a prospective study. *Radiology* 1993; **189**(2): 536–540.
4 Vorwerk D, Guenther RW, Wendt G, Schuermann K. Primary stent placement in iliac occlusion: Follow-up results after 6 years of experience. *R.S.N.A.* November 1993: 1012.
5 Palmaz JC, Laborde JC, Rivera FJ, Encarnacion CE, Lutz JD, Moss JG. Stenting of the iliac arteries with the Palmaz Stent: experience from a multicentre trial. *Cardiovasc Intervent Radiol* 1992; **15**: 291–297.
6 Vorwerk D, Guenther RW. Removal of intimal hyperplasia in vascular endoprostheses by atherectomy and balloon dilatation. *AJR* 1990; **154**: 617–619.
7 Zollikofer CL, Antonucci F, Pfyffer M, Redha F, Salomonowitz E, Stuckmann G, Largiader I, Marty A. Arterial stent placement with use of the Wallstent: mid-term results of clinical experience. *Radiology* 1991; **179**; 449–456.

Accepted 9 February 1994